

REMARKS/ARGUMENTS

Claims 1-10 are pending in this application. Claims 1-10 stand rejected under 35 U.S.C. §103 as being unpatentable over Great Britain 2 180 422. Claims 8 and 10 also stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

First turning to the rejection of claims 8 and 10, the Examiner will note that these claims have been canceled. However, Applicant would like to take this opportunity to explain to the Examiner that the diode claimed in these claims, which reads on diode D2, does perform the function of preventing the charge pump from charging the bootstrap capacitor. This is because if the diode D2 were not present, the bootstrap capacitor would be charged by the charge pump through the transistor Q2.

According to the invention, and the Examiner should note the discussion on page 6 of the specification, diode D2 need not be an actual diode because Q2 may be actively controlled to avoid current flowing to capacitor CBS from the charge pump circuit. Eliminating diode D2 and actively controlling transistor Q2 to prevent the charge pump from charging the bootstrap capacitor avoids the forward voltage drop VFD2 in the diode D2, thus reducing power consumption and allowing operation at a lower battery voltage.

Turning to the rejection of the claims based on 35 U.S.C. §103, Applicants have considered the British reference and have amended the claims to emphasize this difference. According to the invention, in the embodiment where the diode D2 is unnecessary, a transistor switch of the driver circuitry, for example transistor Q2, is actively controlled to prevent the charge pump from charging the bootstrap capacitor. As noted, this has the advantage that the forward voltage drop of the diode D2 is eliminated, thus reducing power conception and allowing operation at a lower battery voltage.

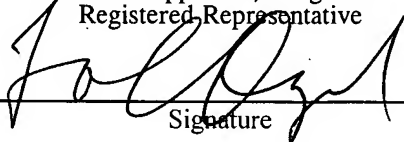
There is no teaching or suggestion in the British reference of actively controlling the transistor switch of the driver circuitry to prevent the charge pump from charging the bootstrap capacitor. An important advantage of preventing the charge pump from charging the bootstrap capacitor is that the charge pump, since it will not charge the bootstrap capacitor, will work well despite leaky external capacitors or leakage in the printed circuit board.

In view of the lack of any teaching or suggestion in the prior art of the invention as now claimed, for which adequate disclosure is contained in the specification, as noted above, it is submitted that all claims in this application are now in condition for allowance, prompt notification of which is requested.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 16, 2004:

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Name of applicant, assignee or
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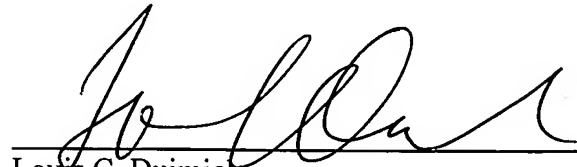


Signature

July 16, 2004

Date of Signature

Respectfully submitted,



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